

## **REMARKS**

Applicant wishes to thank Examiner Dicus and Examiner Dye for the telephonic interviews granted in January. The present response is in line with those discussions.

At present, there is a single obviousness rejection of the pending claims in view of Hallman (U.S. Pat. No. 5,800,904) and Weberg (U.S. Pat. No. 6,203,911).

Hallman is cited by the Examiner as teaching the incorporation of dyes into CORIAN using methods such as dye sublimation or thermal transfer. Weberg is cited as providing specific inorganic fillers in CORIAN-type materials. Applicant notes that Hallman and Weberg: 1) do not actually conduct dye sublimation or thermal transfer with CORIAN, 2) do not describe any technique or method that one would use to conduct dye sublimation or thermal transfer, and 3) do not describe the expected results if such a method were attempted. Indeed, Hallman simply lists a number of materials (e.g., leathers, woven fabrics, papers, cardboard, slate, marble, “corean”, etc.) that may be used as a support layer in a multilayer product and that various decorative techniques might generally be used with the multilayer product (e.g., rotogravure printing, lithographic printing, hot stamping, dye sublimation, thermal transfer, etc.). For the reasons discussed below, if one were to use Hallman<sup>1</sup> to conduct dye sublimation or thermal transfer into CORIAN, the results would not produce the articles of manufacture claimed in the present invention because the state of the art heat transfer methods fail to produce the high transfer levels claimed in the present invention.

The present invention provides materials with high quality fixed images. These materials are prepared by new methods that improve on the methods of the prior art. Use of the new methods produces materials with physical properties that were not achievable using the prior art methods. For example, experiments conducted during the development of the present invention discovered that certain temperature, pressure, and time combinations used during dye sublimation produced unexpected and surprising high quality fixed images in materials such as CORIAN (see e.g., text at pages 14-15 of the specification). These materials had historically been substantially resistant to incorporation of fixed images because of their hard, impenetrable properties—the very properties that makes them commercially attractive as solid surface

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<sup>1</sup> Alone or in combination with the other cited reference.

materials. The present invention provides the first available methods for getting beyond this barrier to produce desirable results. As described below, the state of the prior art before the present invention permitted dye sublimation into material such as CORIAN, but only to very limited levels. The materials produced by the prior art methods do not produce the claimed articles of manufacture.

Each of the present claims describes articles of manufacture defined by high quality images contained in the material (fixed images). Independent claims 15 and 29 describe articles of manufacture having a filled polymeric material comprising a polymer component and an inorganic filler (e.g., CORIAN) wherein a fixed image is contained in the material—the fixed image being defined as having an optical density (“O.D.”) of at least 0.7. Thus, claims 15 and 29 relate to those materials that have a very distinct image within them (e.g., O.D. above 0.7), as opposed to dim or poor images that have lower O.D. values. Section VI of the specification (“fixed image characteristics”; pages 28-30) provides examples of how O.D. values are calculated and analyzed. Claim 1 defines the fixed image in terms of the amount of image in the material as compared to the starting transfer image. For example, in the high quality methods of the present invention, a high percentage of the transfer image is transferred into the materials, resulting in a small difference between the O.D. of the transfer image and the fixed image. This is in contrast to less effective methods where only a small percentage of the transfer image is transferred into the material, resulting in a very high difference (e.g., greater than 1.5) between the O.D. of the starting transfer image and the fixed image in the material.

The state of the art for dye sublimation into CORIAN and related materials prior to the present invention is represented by Beran (U.S. Pat. No. 4,406,662; cited by the Examiner). Beran is the work of DuPont Corporation, the manufacturers of CORIAN. Thus, if one reads the cited prior art references (Hallman, etc.) and decided to attempt dye sublimation or thermal transfer into CORIAN, one would use the methods of Beran.<sup>2</sup> This is particularly true since Hallman, etc. do not provide any specific guidance, protocol, or recipe for conducting dye sublimation or thermal transfer into CORIAN. The question then becomes: would one achieve the claimed materials using the prior art methods, if they were attempted? The answer to this question is provided in Example 1 of the present specification (page 30-32) where Applicant,

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<sup>2</sup> Although for the reasons described above and in previous responses, Applicant does not believe that one would be led to attempt dye sublimation in CORIAN upon reading Hallman.


prior to filing the present application, conducted side-by-side experiments using the methods of Beran (U.S. Pat. No. 4,406,662) and the methods of the present invention to demonstrate the nature and degree of the improvement provided by the present invention over the prior art. As described, the methods of Beran produced materials with fixed image O.D. values less than 0.7, while the methods of the present invention produced fixed images with optical densities well over double this value. Likewise, the percentage of transfer from the transfer image was poor using the methods of Beran, having a difference of over 1.5 O.D. units, while present invention provided negligible differences between the O.D. of the transfer image and the fixed image. Thus, the present invention provides dramatically improved materials (e.g., bright, bold colors) over the materials obtainable by the prior art (bland, dull colors).

Thus, the prior art methods presented by Hallman, Beran, etc. are incapable of generating articles of manufacture as presently claimed. As such, the present claims are novel and non-obvious and should be passed to allowance.

### CONCLUSION

All grounds of rejection of the Office Action have been addressed and reconsideration of the application is respectfully requested. It is respectfully submitted that Applicant's claims should be passed into allowance. Should the Examiner believe that a telephone interview would aid in the prosecution of this application, Applicant encourages the Examiner to call the undersigned collect at 608.218.6900.

Dated: 2/14/05

  
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